



# UNITED STATES PATENT AND TRADEMARK OFFICE

1  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,309	02/17/2004	Shao-An Cheng	V9661.0054	9754
32172	7590	12/31/2007	EXAMINER	
DICKSTEIN SHAPIRO LLP 1177 AVENUE OF THE AMERICAS (6TH AVENUE) NEW YORK, NY 10036-2714			SMITH, NICHOLAS A	
ART UNIT		PAPER NUMBER		
		1795		
MAIL DATE		DELIVERY MODE		
12/31/2007		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/780,309	CHENG ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Nicholas A. Smith	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on 10 October 2007.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-13, 21-23 and 27-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-13, 21-23 and 27-36 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) All    b) Some \* c) None of:
1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)  
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)  
 3) Information Disclosure Statement(s) (PTO/SB/08)  
 Paper No(s)/Mail Date \_\_\_\_\_.
- 4) Interview Summary (PTO-413)  
 Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) Notice of Informal Patent Application  
 6) Other: \_\_\_\_\_.

**DETAILED ACTION**

**Status of Claims**

1. Claims 1-13, 21-23 and 27-36 remain for examination.

***Claim Rejections - 35 USC § 112***

2. Due to the amendment of claim 1 and 35, the rejection under 35 U.S.C. 112 is withdrawn.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated over Boschloo et al. (*Spectroelectrochemistry of Highly Doped Nanostructured Tin Dioxide Electrodes, J. Phys. Chem. B* 1999, vol. 103, 3093-3098) as evidenced by Nath (US 4,605,565).
5. Bochloo et al. as evidenced by Nath is applied to the claims for the same reasons as stated in paragraph(s) 7 of the previous office action.
6. In regards to claim(s) 1 amendment “an atomic,” the amendment is grammatical in nature and therefore does not change the grounds as previously interpreted.

***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boschloo et al. in view of Kotz et al. (US Patent 4,839,007).

9. Boschloo et al. in view of Kotz et al. is applied to the claims for the same reasons as stated in paragraph(s) 10-11 of the previous office action.

10. Claims 5-6, 8-10, 21, 34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boschloo et al. as evidenced by Nath and Koizumi et al. (US 2004/0011665).

11. Boschloo et al. as evidenced by Nath and Koizumi et al. is applied to the claims for the same reasons as stated in paragraph(s) 13-15 of the previous office action.

12. In regards to claim(s) 35 amendment, Boschloo et al. as evidenced by Nath and Koizumi et al. is applied to the claims for the same reasons as stated in paragraph(s) 15 of the previous office action. Furthermore, Boschloo et al. discloses that doping amount in nano-structured metal oxide optimizes the electrical conductivity (p. 3903). It would have been obvious to one of ordinary skill in the art to select the claimed doping ratio because Boschloo et al. teaches that such doping is a result-effective variable to affect electrical conductivity (Boschloo et al., p. 3903).

13. Claims 5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita et al. (US Patent 5,446,339).

14. Kinoshita et al. is applied to the claims for the same reasons as stated in paragraph(s) 17-18 of the previous office action.

15. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boschloo et al. as evidenced by Nath and Koizumi et al. in regards to claim 5 as stated above in paragraph 7, and in view of Alder (US Patent 3,960,678).

16. Boschloo et al. as evidenced by Nath and Koizumi et al. and in view of Alder is applied to the claims for the same reasons as stated in paragraph(s) 20-21 of the previous office action.

17. Claims 22-23, 27 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boschloo et al. in view of Kotz et al. and as evidenced by Nath, Koizumi et al. and Murphy et al. (US 5,972,196).

18. Boschloo et al. in view of Kotz et al. and as evidenced by Nath, Koizumi et al. and Murphy et al. is applied to the claims for the same reasons as stated in paragraph(s) 23-27 of the previous office action.

19. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boschloo et al. in view of Kotz et al. and as evidenced by Nath, Koizumi et al. and Murphy et al. (US 5,972,196), and further in view of McGuire (US Patent 6,368,472).

20. Boschloo et al. in view of Kotz et al. and as evidenced by Nath, Koizumi et al. and Murphy et al. and in further view of McGuire is applied to the claims for the same reasons as stated in paragraph(s) 29-30 of the previous office action.

21. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Boschloo et al. in view of Kotz et al. and as evidenced by Nath, Koizumi et al., Murphy et al. and Zen et al. (US Patent 5,855,760).

22. Boschloo et al. in view of Kotz et al. and as evidenced by Nath, Koizumi et al., Murphy et al. and Zen et al. is applied to the claims for the same reasons as stated in paragraph(s) 32 of the previous office action.

***Response to Arguments***

23. Applicant's arguments filed 10 October 2007 have been fully considered but they are not persuasive. In regards to Applicant's argument that Boschloo et al. does not explicitly disclose the claimed nanoparticle size because Boschloo et al. discloses the size before drying and heating, Applicant's argument is merely a conclusion and is unsupported by evidence. Without proof to the contrary, the particles are understood to remain the same size; there is no evidence of grain growth or refinement. In regards to Applicant's argument that Kinoshita et al. does not explicitly disclose a member capable of being an electrode, Applicant is reminded that Kinoshita et al. discloses a film that is conductive and thus is capable of acting as an electrode member.

**Conclusion**

24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nicholas A. Smith whose telephone number is (571)-272-8760. The examiner can normally be reached on 8:30 AM to 5:00 PM, Monday through Friday.

25. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on (571)-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

26. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NAS

*Harry D. Wilkins, III*  
**HARRY D. WILKINS, III**  
**PRIMARY EXAMINER**  
*A.U. 1795*